

WHAT IS CLAIMED IS:

1. A method for activating a vascular endothelial growth factor (VEGF) receptor of one or more cells, the method comprising:

5 positioning an electromagnetic field generator in proximity to a VEGF receptor such that the flux of an electromagnetic field generated by the electromagnetic field generator will extend through the VEGF receptor; and

generating an electromagnetic field using the electromagnetic field generator having a rate of fluctuation that activates the VEGF receptor.

10 2. The method of Claim 1, wherein the VEGF receptor is part of a human bone cell.

3. The method of Claim 1, wherein the VEGF receptor is part of a human vascular endothelial cell.

15 4. The method of Claim 1, wherein the predetermined rate of fluctuation is approximately 3831 Hertz.

20 5. The method of Claim 1, wherein VEGF receptors of a plurality of cells are activated by the electromagnetic field.

25 6. The method of Claim 1, wherein the electromagnetic field is generated such that the electromagnetic field causes particular biological effects to occur that are substantially similar to biological effects that occur when a VEGF receptor is activated by a VEGF ligand.

7. The method of Claim 6, wherein the biological effects comprise cell growth.

8. A device for activating a vascular endothelial growth factor (VEGF) receptor, the device comprising:

a generator operable to generate an electromagnetic field having a rate of fluctuation that activates a VEGF receptor; and

5 a positioning apparatus operable to position the generator such that the flux of the electromagnetic field will extend through the VEGF receptor.

9. The device of Claim 8, wherein the generator is operable to generate an electromagnetic field having a rate of fluctuation that activates a VEGF receptor of a human bone cell.

10 10. The device of Claim 8, wherein the generator is operable to generate an electromagnetic field having a rate of fluctuation that activates a VEGF receptor of a human vascular endothelial cell.

15 11. The device of Claim 8, wherein the generator is operable to generate an electromagnetic field having a rate of fluctuation of approximately 3831 Hertz.

20 12. The device of Claim 8, wherein the generator is operable to generate an electromagnetic field operable to activate VEGF receptors of a plurality of cells.

25 13. The device of Claim 8, wherein the generator is operable to generate an electromagnetic field that causes particular biological effects to occur that are substantially similar to biological effects that occur when a VEGF receptor is activated by a VEGF ligand.

14. The device of Claim 13, wherein the biological effects comprise cell growth.

15. The device of Claim 8, wherein the generator comprises:

one or more field coils; and

one or more alternating current (AC) sources electrically coupled to one or more of the field coils.

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16. The device of Claim 8, wherein the positioning apparatus is selected from the group consisting of a cast, a clamp, an orthopedic device, an orthopedic support, a strap, a support, an adhesive, a belt, and a tie.

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17. A device for activating a vascular endothelial growth factor (VEGF) receptor, the device comprising:

means for generating an electromagnetic field having a rate of fluctuation that activates a VEGF receptor; and

5 means for positioning the means for generating the electromagnetic field such that the flux of a generated electromagnetic field will extend through the VEGF receptor.